Work Ord June-24-13 1:5		3561	*.		*10.3	561	*;							Page 1
Item ID: Revision ID:	D4054-001				Accept	*N0	nn	040	100)*	Setup		*N	S1*
Item Name:	Tube Assembly	y		•				÷				Stop	*N	S2*
Start Date: Required Date:	6/26/13 7/05/13	Start Qt Req'd Q	•	*4* *4*			Item l	ID:						
Reference: Approvals:	Process Pla	n:_ ML	J	Date: \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Tooling:		D	ate:	_		Run	Start	*N	R1*
	QC:			Date:	SPC (Y/N):		D	ate:				Stop	*N	R2*
Sequence ID/ Work Center I	D .	Operatio Descripti		(Set Up/ Run Hours	То	ol ID	Tool #	Plan Code	Accept Qty	Rej Qty		Reject Number	Insp. Stamp
Draw Nbr	Rev	ision Nbr				,								
D4054	A									٠				٠,
100					0.00									13-10-0
100 Small Fab		Small Fab	Memo		0.00					-4		<u> </u>		13-10-0
Small Fab			Bend tube	as per Dwg D4054										
			Install slee	ves and nuts										
			Flare ends	as per Dwg D4054.										
110		QC5- Inspe	ct part com	pleteness to step on W/O	0.00									
110										@) 13	2.10.0	D L)
QC			Memo		0.00									

Memo

Quality Control

DQA:			Date:										$\mathbb{Z} \cap \mathcal{A} D$	T
						WORK ORDER NON-	-CC	ONFO	RMANCE / UP			-	AEROSPA	CE
QA Closed:			Date:							W	ork Order up	odate only		
Work Orde	er.					DISPOSITION				AGAINST DI	EPARTMENT,	/PROCESS		
Work Oral	_				—	Rework	1		Skid-tube	Crosstube	٦	Water Jet	Engineering	٦
Part N	No.					Scrap			Machining	Small Fab	Pro	d. Eng. Coor.	Quality	-
						Use-as-is			noforming	Finishing	┥	re/Packaging	Other	7 !
NCR I	Vo.					Suspected Unapproved	1		Large Fab	Composite	1	Supplier		7
	_						4				_			
Root					Desci	ription of work order update	ı	Initial	Acti	on	Sign &			
Cause		Date	Step	Qty		or non-conformance	Ch	ief Eng	Descri	ption	Date	Verification	QC Inspecto	r
Design	Ш					·						-		!
Doc/Data														
Equip/Tooling	Ш													
Handling/Pre														
Material	Щ													
Operator	Ш						1						_	
Offset/Setup														
Process	Ш													
Supplier		*,		:										
Training	Ш								·					
Transport	Ш													
Unapproved											<u></u>			
							FAI	ULT CAT	regory		<u></u>			
Landi					_	General		1		Γ	7		¬	
	\vdash	Bending	_		_	Bend		1	rogram	<u> </u>	Outside Dim	⊢	Pressure/Forced	
	\vdash		ot Concer	ntric	-	BOM/Route	<u> </u>	Grain		-	Over/Under	⊢	Set-up	
	\vdash	Cracks			<u> </u>	Broken/Damage/Defect	<u> </u>	Hardwa			Part Incorred	·	Temperature/Cu	re
	Н.		k/Ripple,	/Wave	-	Burrs	\vdash	1	ion Incomplete/Un	· -	Part Lost/Mi	ssing	Weld	
	⊢	Cuffs			<u> </u>	Contamination	├	4	ions Incomplete/U	nclear	Part Moved	L	Wrong Stock Pull	ed
	-	Crushing			ļ	Countersink		1	ned/off center		Positioned V		٦	
	-	leat Trea		T 1.	-	Cut Too Short	⊢	Mislabe			Power Loss/	Surge	Other	
		•	n Strip in	Tube	-	Drawing	\vdash	Misread	t		•			
	—	Marks/Ch			\vdash	Drill Holes	\vdash	Off-set	- 111 - 1					
	_		equence		<u> </u>	Finish	<u> </u>	4	Calibration					
	ı ∨	wave/Tw	ist in Tub	e e	- 1	Fit/Function	1	Out of S	Sequence					

Work Order ID 103561 *103561* Page 2 June-24-13 1:58:17 PM Accept *N900040100* Setup Start Item ID: D4054-001 **Revision ID:** Stop Tube Assembly Item Name: *4* 6/26/13 Start Oty: 4.00 **Start Date: Cust Item ID:** Required Date: 7/05/13 Req'd Qty: 4.00 **Customer:** Reference: Run Start **Tooling:** Date: Date: Approvals: Process Plan: Stop Date: SPC (Y/N): Date: QC:_ Tool ID Tool # Plan Reject Accept Reject Sequence ID/ Operation Set Up/ Insp. Qty Qty Number Description Code Stamp Work Center ID **Run Hours** Identify as per dwg & Stock Location: 57194 0.00 120 *120* 0.00 Packaging Memo Packaging

0.00

0.00

QC21- Final Inspection - Work Order Release

Memo

130

120

Quality Control

74/4m/3/10/01 MLS 13-10-01

DQA:		Date:					_					79	™∂ART
QA Closed:		Date:			WORK ORDER NON	-CC	ONFO	RMANCE / UF		Vork Order u:	odate only	П	AEROSPACE
					DISPOSITION					EPARTMENT	-		
Work Order:								a		٠			<u> </u>
Part No.					Rework Scrap		1	Skid-tube Machining	Crosstube Small Fab	-	Water Jet d. Eng. Coor.		Engineering Quality
NCR No.	·		_	. :	Use-as-is Suspected Unapproved		Thern	noforming Large Fab	Finishing Composite	Rec/Sto	re/Packaging Supplier	\vdash	Other
Root				Desci	ription of work order update		nitial	Acti	on	Sign &			
Cause	Date	Step	Qty		or non-conformance		ief Eng	Descri	iption	Date	Verificatio	n	QC Inspector
Design		<u> </u>	,									\exists	
Doc/Data	1	-											
Equip/Tooling													
Handling/Pre	1												
Material \$	1												
Operator 📜													
Offset/Setup	1									1			
Process	1									İ			•
Supplier	1									ŀ		.	
Training]									ļ	1		
Transport	1					1							
Jnapproved	1									1			
	'	<u> </u>				FAL	JLT CAT	EGORY			1		
Landing	Gear		,		General								
	Bending				Bend		Folio/P	rogram	Γ	Outside Dim	ensions		Pressure/Forced
	Centre No	ot Concer	ntric		BOM/Route	\vdash	Grain	J		Over/Under	tolerance	-	Set-up
	Cracks				Broken/Damage/Defect	П	Hardwa	re	-	Part Incorred		_	Temperature/Cure
	Crimp/Kir	nk/Ripple	/Wave		Burrs	Н	Inspecti	on Incomplete/Un	qualified	Part Lost/Mi	ssing	\vdash	Weld
	Cuffs	. , ,	,		Contamination	$\vdash \vdash$	-	ions Incomplete/U	· –	Part Moved	Ŭ	Н	Wrong Stock Pulled
	Crushing				Countersink			ned/off center		Positioned V	Vrong	_	
	Heat Trea	ıt			Cut Too Short	-	Mislabe		F	Power Loss/	-		Other
	Inspection		Tube		Drawing	-	Misread		L_		0 -		
	Marks/Ch	٠,			Drill Holes		Off-set						
	Turning S				Finish	Ь——		Calibration					
	Wave/Tw		e		Fit/Function	$\boldsymbol{\vdash}$		Sequence					
	A				A	. 1		·					

Picklist Print

June-24-13 1:58:17 PM

Work Order ID:

103561

Parent Item:

D4054-001

Parent Item Name:

Tube Assembly

Start Date: 6/26/13

Required Date: 7/05/13

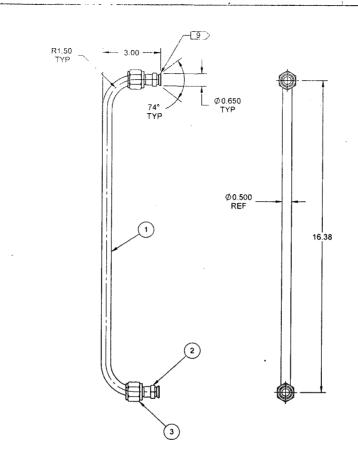
Start Qty: 4.00

Required Qty: 4.00

Comments:	IPP rev A 10.01.19	new issue EC	verified	by:DD	,	- P						*	
Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
AN818-8D		Purchased	No	;		100	Each	15.0000	2	8		, -2	10-01
Nut		,							amada a da a da a da a da a da a da a d		Γ,	- د،	10-01
		1.0		Location		Loc Qty	<u>L</u>	oc Code		•	~		
ti, et				ST348 /2	-6474	10				<u></u>			
					445	10				_6			
				ST349		5							
				122	2265	5							
M6061T6T0.500W.049 6061-T6 RD Tube .500 x.	049W	Purchased	No			100	f	75.9800	1.78	7.4947368	F	FI	3-10-0
				Location		Loc Oty	<u>L</u>	oc Code		_			
	× *			GA 12	6335	55				7.4947			
	•			117	270	55							
				MAT014		20.98				 			
				. 122	2749	20.98							
MS20819-8D Sleeve		Purchased	No			100	Each	20.0000	2	8	FF	13-	-10-0
				Location		Loc Oty	<u>L</u>	oc Code					
	1.			ST312		20							
				119	9531	5							
				123	900	15				8			

DQA:		_ Date:						_				™ ∂ART
QA Closed:		Date:			WORK ORDER NON-	-C(ONFO	RMANCE / UP		Vork Order uj	odate only	AEROSPACE
					DISPOSITION					·		
Work Orde	er:				DISPOSITION				AGAINST	EPARTMENT	PROCESS	
					Rework			Skid-tube	Crosstube		Water Jet	Engineering
Part N	No.,				Scrap			Machining	Small Fab	Pro	d. Eng. Coor.	Quality
					Use-as-is		Therr	noforming	Finishing	Rec/Sto	re/Packaging	Other
NCR N	No				Suspected Unapproved			Large Fab	Composite		Supplier	
		, .					<u> </u>				· · · · · · · · · · · · · · · · · · ·	
Root				Desc	ription of work order update		Initial	Actio		Sign &	_	
Cause	Date	Step	Qty		or non-conformance	Ch	nief Eng	Descri	ption	Date	Verification	QC Inspector
Design												
Doc/Data											,	
Equip/Tooling	\blacksquare											
Handling/Pre												
Material	_											
Operator					•							
Offset/Setup	\square											
Process Supplier					•							
Training												
Transport												
Unapproved												
	I	_1				FΔI	ULT CA	TEGORY			<u> </u>	1
Landii	ng Gear				General							
	Bending			Г	Bend		Folio/F	rogram	Γ	Outside Dim	ensions	Pressure/Forced
	Centre N	ot Concer	ntric		BOM/Route		Grain	O	<u> </u>	Over/Under	 	Set-up
	Cracks				Broken/Damage/Defect		Hardwa	ire		Part Incorre	-	Temperature/Cure
	Crimp/Ki	nk/Ripple	/Wave		Burrs		Inspect	ion Incomplete/Und	qualified	Part Lost/Mi	ssing	Weld
	Cuffs				Contamination		1	ions Incomplete/Ur	· –	Part Moved		Wrong Stock Pulled
	Crushing				Countersink		Misalig	ned/off center		Positioned V	Vrong	_
	Heat Trea	at			Cut Too Short		Mislabe	eled		Power Loss/	Surge	Other
	Inspectio	n Strip in	Tube		Drawing		Misread	t	_			
	Marks/Cl	natter			Drill Holes		Off-set					
:	Turning S	Sequence			Finish		Out of (Calibration				
	Wave/Tw	vist in Tub	oe -		Fit/Function	1	Out of 9	Sequence				

H:/FORMS/Quality Assurance\approved QA/NCRWO RevH



QTY -001 DESCRIPTION NO. TUBL ASSEMBLY D4054-001 MS20819-8D SLEEVE AN818-8D

SHOPCORY RETURN TO ENGINEERING. UNCONTROLLED COPY SUBJECT TO AMENDMENT WITEOUT SOTICE

WORK OR TERMLY
1306-26

D4054-001 TUBE ASSEMBLY

NOTES: 1) MATERIAL: 6061-T6 SEAMLESS ALUMINUM TUBING 0.500 O.D. x 0.049 WALL PER WW.T-700/6 REF DART SPEC M6061T60.500W.049

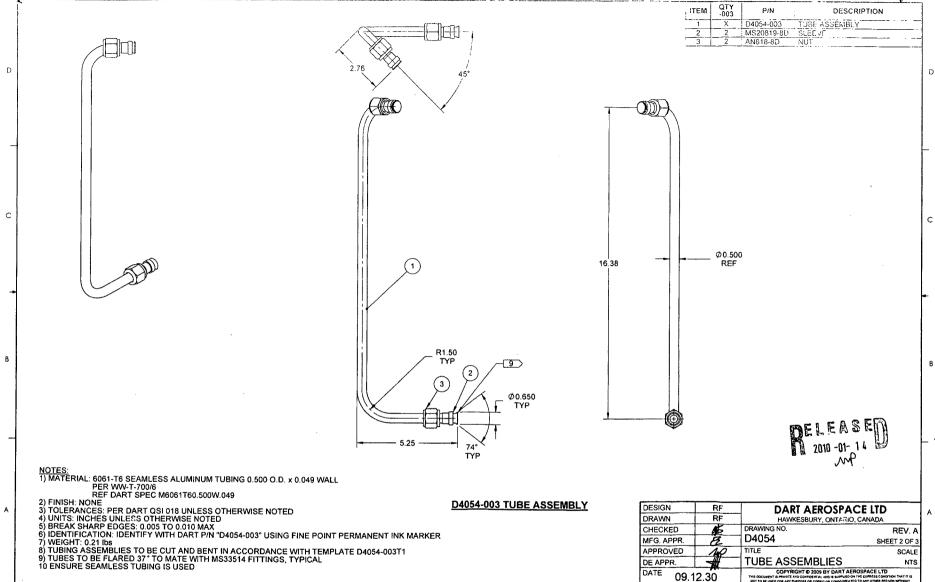
2) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: IDENTIFY WITH DART P/N "D4054-001" USING FINE POINT PERMANENT INK MARKER

8

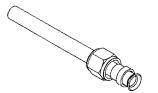
6) IDENTIFICATION. IDENTIFY WITH DART PIN 04034-001 USING FINE POINT PERMANENT INK.
7) WEIGHT: 0.20 lbs
8) TUBING ASSEMBLIES TO BE CUT AND BENT IN ACCORDANCE WITH TEMPLATE D4054-001T1
9) TUBES TO BE FLARED 37 TO MATE WITH MS33514 FITTINGS, TYPICAL
10 ENSURE SEAMLESS TUBING IS USED

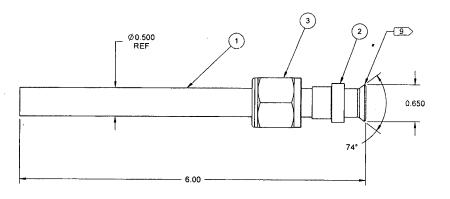
Α	NEW IS	SUE		RF	09.12.30				
REV.			DESCRIPTION	BY DATE					
DESIGN	4	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA						
DRAW	1	RF							
CHECKED MFG. APPR.		15	DRAWING NO.		REV. A				
		Z	D4054	SHEET 1 OF 3					
APPRO	VED	140	TITLE		SCALE				
DE APPR.			TUBE ASSEMBLIES		NTS				
DATE	09.1	2.30	COPYRIGHT © 2009 BY DART AEROSPACE LTD THE DOCUMENTS PROVIDENT AND E SUPPLED ON THE SUPPLES CONTINUE THAT IT IS NOT TO BE USED FOR ANY PAPERS OF COMERGE OF COMMENTS. ANY OTHER PRESONWITHOUT						

5



ITEM QTY	PIN	DESCRIPTION
1 X	D4054-005	JUSE ASSEMBLY
2 1	MS20819-8D	SLEEVE
3 1	AN818-8D	NUT
	7110 10-00	. 1. 101







D4054-009 TUBE ASSEMBLY

NOTES:
1) MATERIAL: 6061-T6 SEAMLESS ALUMINUM TUBING 0.500 O.D. x 0.049 WALL
PER WW.-T-700/6
REF DART SPEC M6061T60.500W.049
2) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: IDENTIFY WITH DART P/N "04054-009" USING FINE POINT PERMANENT INK MARKER
7) WEIGHT: 0.07 lbs
8) TUBING ASSEMBLIES TO BE CUT AND BENT IN ACCORDANCE WITH TEMPLATE D4054-009T1
9) TUBES TO BE FLARED 37" TO MATE WITH MS33514 FITTINGS

C

DESIGN	RF	DART AEROSPACE LTD					
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA					
CHECKED	45	DRAWING NO.	REV. A				
MFG. APPR.	8	7 D4054	SHEET 3 OF 3				
APPROVED	140	TITLE	SCALE				
DE APPR.	-#-	TUBE ASSEMBLIES	NTS				
DATE 09 1	2 30	COPYRIGHT © 2009 BY DART AERO THIS OCCUMENT IS PRIVATE AND CONTIDENTIAL AND IS SUPPLIED ON TO					